

of the mouthparts in all of these families is much alike and not difficult to understand. The homologous parts in the mouths of the various Nematocera are readily distinguishable and comparable. These mouthparts as compared with the mouthparts of the specialized Diptera, *Musca* for example, are distinctly generalized. Now if the parts of the specialized dipterous mouth, as that of *Musca*, can be homologized with the parts of the generalized mouth, as presented by the Nematocera, then the remaining problem is to homologize the mouthparts of the Nematocera with the mouthparts of other insects, with the racial orthopterous type of mouthparts.

In order that the testimony from the

study of comparative anatomy alone may be sufficient to solve our problem it is necessary that (*a*) there be a series of gradatory mouthpart conditions present among Diptera sufficiently continuous to indicate unmistakably the homologies of the mouthparts within the order, and (*b*) that the generalized dipterous mouthparts be sufficiently generalized to admit of a certain comparison and homologizing of the parts with the mouthparts of other insects in whose case the homologies of the mouthparts with those of the racial orthopterous type are authoritatively accepted. Whether these conditions obtain may be, I hope, revealed by the final publication of my studies.

AN UNKNOWN TRACT ON AMERICAN INSECTS BY THOMAS SAY.

BY SAMUEL H. SCUDDER, CAMBRIDGE, MASS.

In the library of the Boston Society of Natural History, among the works received from the library of Dr. T. W. Harris, is a tract which seems to have escaped the notice of bibliographers and others. Strangely, it does not even appear in the Catalogue of the Harris Library, (*Proc. Bost. soc. nat. hist.*, vii, 266-271), nor is it contained in the "Complete Writings" of Say, edited by LeConte. It is an octavo pamphlet of seventeen printed and numbered (3-19) pages besides the title page, the reverse of which is blank, and describes for the first time twenty-two insects; of these all but two are redescribed in later

papers in the same terms with scarcely a change. The remaining two, however, are not found at all in the Complete Writings and appear to be quite overlooked by subsequent writers, the Pentatoma being unmentioned by Uhler in his Check-list of the Hemiptera Heteroptera of North America (1886), and the Trypeta not being found in Osten Sacken's Catalogue of the described Diptera of North America (1878.)

The title page of the tract reads as follows: Descriptions of new species of North American insects, found in Louisiana by Joseph Barabino. By Thomas Say. March, 1831. Indiana. Printed

at the School Press, New Harmony. The species contained in it are the following; we have prefixed the number of the pages on which they occur, and appended the volume and page of the Complete Writings when found there.

- Page 3, Chlaenius circumcinctus, ii, 531.
 4-5, Oodes ? parallelus, ii, 532.
 5, Dytiscus bimarginatus, ii, 556.
 5-6, Noterus bicolor, ii, 561.
 6, Cupes cinerea, ii, 643.
 7, Hydrophilus castus, ii, 645-646.
 7-8, Trox alternatus, ii, 652-653.
 8-9, Tenebrio rufofasciatus, ii, 659.
 9, Oedemera apicalis [sic], ii, 660.
 9-10, Acanthocinus quadrigibbus, ii, 665.
 10, Altica mellicollis, ii, 668.
 11, Scymnus terminatus, ii, 671.
 11-12, Pentatoma maculiventris.
 12-13, Belostoma fluminea, i, 364-365.
 13, Belostoma grisea, i, 365.
 14, Corixia calva, i, 366.
 14-15, Formica mellea, ii, 731.
 15, Polistes metrica, ii, 768.
 16, Anthophora frontata, ii, 784-785.
 17, Megachile polaris [sic], ii, 782.
 18-19, Xylcopa carolina, Fabr., ii, 786-787.
 19, Trypeta trifasciata.

This tract is not to be confounded with the very similar Barabino pamphlet, published in the following year, describing nineteen species, although printed at the same press and evidently with the same type.

The descriptions of the two overlooked species are here carefully reproduced, with some notes regarding them kindly sent at my request by Mr. P. R. Uhler and Baron Osten Sacken.

[11.] PENTATOMA, Oliv. Latr.

P. maculiventris, Hemelytra with a line at

tip; venter with five series of black points.

Inhab. U. S.

Body yellowish or pale brownish, with dense, rather large punctures: *thorax* acutely angulated each side behind the middle; *hemelytra* having an abbreviated fuscous line at tip of the membranous portion: *antennæ*, first joint short; 2d longer than the third: *tergum* on the lateral margin with a blackish dot on each incisure: *beneath* yellowish: *feet* immaculate; *thighs* sometimes having numerous minute blackish points; *anterior tibiae* with an obvious spine over the slight emargination: *venter* with five obvious series of small black dots. [12.]

Length less than two-fifths of an inch.

This is a common insect in many parts of the Union. The anterior central angle of the venter is produced between the bases of the posterior feet as in *Acanthosoma* of Curtis; but it does not agree with that genus in the more essential characters of the antennæ and tarsi.

Mr. Uhler writes: Upon comparing the species of *Podisus* with the printed slip sent me, I find the description fits very well the *P. spinosus* Dallas. The description does not agree with any other of our North American species, as at present known. The humeral angles in *P. severentris* Uhl. are not "acutely angulated," but they are in *P. spinosus*. — P. R. UHLER.

[19.] TRYPETA, Meig.

T. trifasciata, Green; wings with three bands.

Inhab. Louisiana.

Body brassy-green, polished: *vertex* greenish: *front* pale ferruginous, pruinose: *antennæ* —: *hypostoma* dark livid, pruinose: *mouth* pale ferruginous: *stethidium* entirely brassy-greenish: wings yellow-white, a blackish band on the middle obsolete at the thinner

margin, and not including the smaller transverse nervure, but a little anterior to it; a broader and not quite parallel band midway to the tip, including the larger transverse nervure and an equally broad band at tip not arcuated: *tergum* purplish toward the tip: *poisers* pale yellowish: *feet* pale honey-yellow,

Length less than one-fifth of an inch.

Dr. Harris appends to this "*Ortalis aenea* Wied."

Baron Osten Sacken sends us the following note regarding this insect:—

Besides the *Trypeta trifasciata* Say, 1831, which you enquire about, there is an *Ortalis trifasciata* Say, Journ. Acad. Philad., vi, 184 (1830); Compl. Writ., ii, 368 (compare my Catal, 1878, p. 186).

This latter, according to Loew (l. c.) is a synonym of *Chaetopsis* (*Ortalis*) *aenea* Wied. But this synonymy can be accepted only if we read in Say's de-

scription "connected with the second band by the *posterior* margin," and not by the *costal* margin, as Say has it (Comp. his description with the figure of the wing in Monogr. N. Amer. Dipt. iii, tab. 9, fig. 19). Loew, l. c., iii, 171, line 10 from bottom, *has overlooked this discrepancy*. However, the species being very common, the synonymy is very probable.

The *Trypeta trifasciata* Say, New Harmony, 1831, from Louisiana, is evidently likewise a *Chaetopsis*, and *perhaps* the same as *C. debilis* Loew, Monogr., iii, 172, from Cuba. Compare the figure of the wing (l. c., fig. 20) with Say's statement "an equally broad band at tip, *not arcuated*." *Tryp. trifasciata* Say should therefore be placed *provisionally* after *debilis*, as a *possible* synonym, but with a query.—C. R. OSTEN SACKEN.

EARLY STAGES OF TRIPTOGON MODESTA.

BY CAROLINE G. SOULE, BROOKLINE, MASS.

On July 13th, 1898, a battered specimen was brought me, found under an electric light in Brandon, Vt. At about 3 p. m. the moth began laying eggs and the following morning had laid eighty-four. On July 14 and 15 she began laying at about 3 p. m., and during these afternoons and nights laid thirty-two and sixteen eggs respectively.

These eggs were 2.5 mm. long and nearly 2 mm. wide at the widest part, ovoid, greenish gray—looking greener at night—and having a pearly lustre. On the second day they became heliotrope-color. On July 20th

they became greenish, showed the larvae distinctly, and the first-laid eggs hatched, giving an egg-period of barely seven days.

Young larva—length 7 mm., slender. Head round, pale green. Body very dark green, the dorsum looking as if undershot with black, except the last two segments which were pale green like the head. The body was rough, and had pale green subdorsal lines from the head to the tips of the anal prolegs. These lines became yellow two days later. There were seven pale-green obliques rougher than the body. The legs